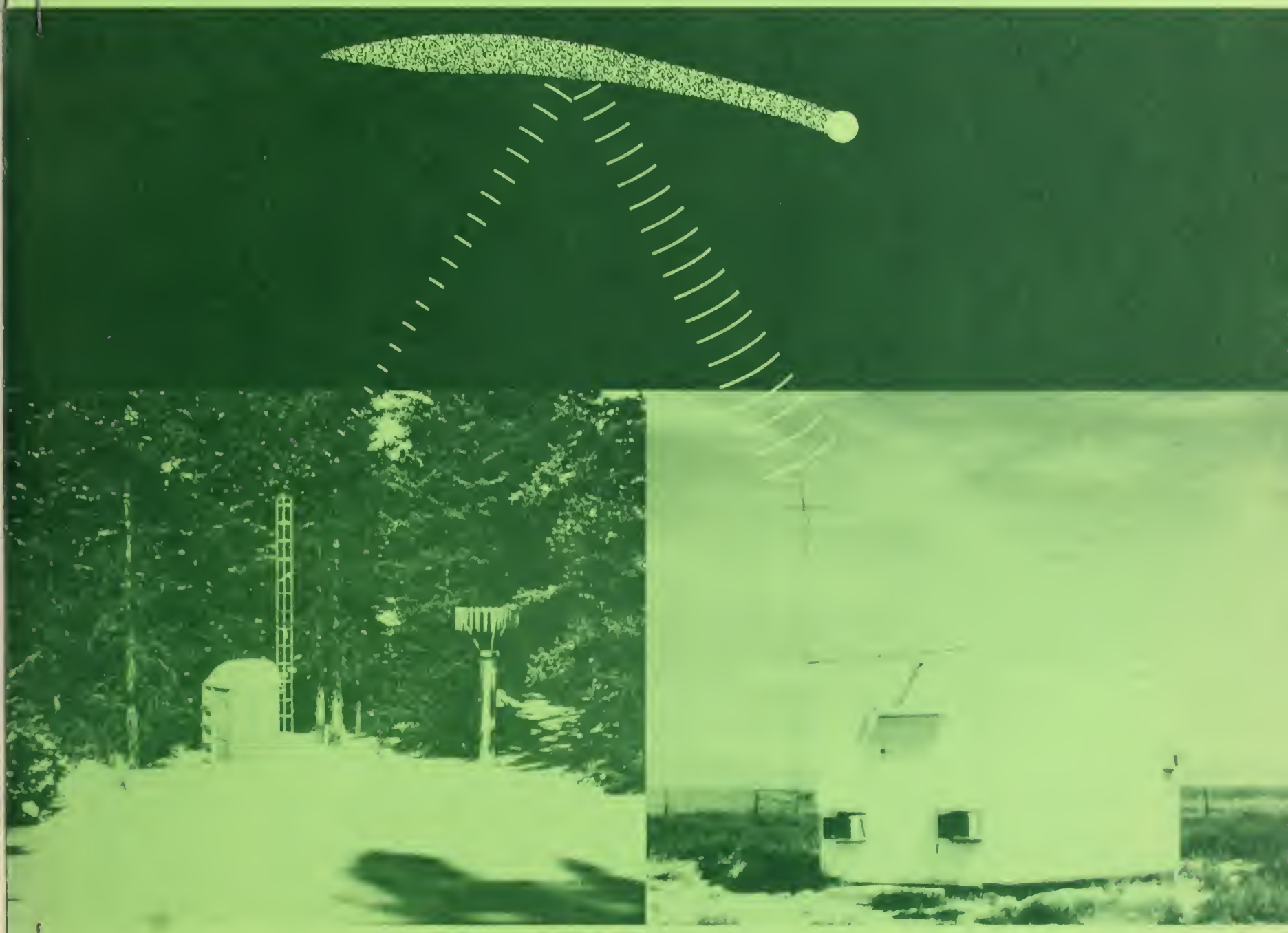
WATER SUPPLY OUTLOOK FOR ARIZONA



U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

SALT RIVER VALLEY WATER USERS ASSOCIATION
and
ARIZONA WATER COMMISSION

AS OF
APR. 1, 1978

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed inside the back cover of this report.

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: SOME OF THE DATA IN THIS REPORT HAVE BEEN RECEIVED THROUGH THE SOIL CONSERVATION SERVICE'S NEW SNOTEL SYSTEM WHICH TRANSMITS INFORMATION VIA THE SPACE AGED METEOR BURST METHOD FROM DATA SITES TO MASTER STATIONS LIKE THESE.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P.O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1220 S.W. Third Ave., Portland, Oregon 97204
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W., Calgary, Alberta T3C 1A6.

USDA-SCS-PORTLAND, OR 1977

WATER SUPPLY OUTLOOK FOR ARIZONA

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

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Report prepared by

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PHOENIX, ARIZONA 85025

Snow water sensors - conventional pressure sensing pillow and LSG isotopic snow gage.

ARIZONA SUMMARY
as of
APRIL 1, 1978

EXTREMELY HEAVY RUNOFF DURING MARCH HAS ASSURED MUCH ABOVE NORMAL WATER SUPPLIES FOR THE MAJOR IRRIGATED AREAS OF ARIZONA. MOST RESERVOIRS ARE CLOSE TO CAPACITY AND ABOVE AVERAGE RUNOFF IS EXPECTED THROUGH MAY.

SNOW COVER

Snow cover declined drastically the last half of March due to the warm temperatures and absence of heavy storms. Except for scattered patches, most of the snow below 8000' has melted. At the very highest elevations, however, good snow cover remains. Snow depths of 50-80" with water contents of 24-28" were observed at several snow courses including Snow Bowl No. 2, Bill Williams Summit, Mormon Mt. Summit, Promontory Butte, Baldy No. 3, and Whitewater-Baldy. The deepest snow was measured on Mt. Ord where there is 100" of snow with a water equivalent of 37". Although this is much above average, it is far from the record 1973 amount of 53".

Snow cover now varies from 116% of average on the Gila Watershed to 132% on the Verde, with the Salt and Little Colorado at 126 and 122% of average respectively.

PRECIPITATION

March precipitation was two to four times average at most mountain stations. The Verde and Tonto Watersheds received the greatest precipitation, with amounts of 8 to 12" common at the higher elevations. Only a small area in the White Mountains on the Little Colorado received near normal amounts.

Winter precipitation since November 1 is not particularly high due to the dryness of November and December. Accumulated winter amounts range from near normal on the Little Colorado Watershed above Lyman Reservoir to 180% of average on the Verde. The Gila and Salt received 130 and 160% of average.

SOIL MOISTURE

Surface soil moisture is decreasing below 7000', but will still yield high runoff from a heavy storm in the next few weeks. Above 7000' the watershed is saturated, so very high runoff can be expected from moderate storms.

RESERVOIR STORAGE

Except for San Carlos, Roosevelt, Lyman, and the Colorado River Reservoirs, all storage facilities are full. Roosevelt Lake, containing 90% of capacity, is expected to fill by the end of the month. San Carlos and Lyman Reservoirs are about 1/4 full, but will not come close to filling. Painted Rock Dam contained 386,000 ac-ft. a month ago, but releases of 250 to 500 cfs are slow reducing its contents.

STREAMFLOW AND WATER SUPPLY

The warm and very heavy storms falling on a saturated watershed produced record March runoff on the Verde and Tonto Rivers. The Salt flow was the highest since 1905 and the Gila was the highest since 1941. The Salt River Project streams are predicted to produce 390,000 ac-ft. during April-May, making the total January-May runoff 2.26 million ac-ft, slightly exceeding that received in 1973.

Although the April-May volume forecasts are 50-90% above average, the heavy runoff is over. Since much of the snow is gone and the probability of heavy storms declines in April, the river flows are generally expected to gradually taper off. Water will continue to flow in the Salt River through Phoenix for the next several weeks, but high flows are not anticipated unless an extremely unusual storm occurs.

Water supplies will be adequate this year with a substantial amount of carryover storage available for next year.

THIS IS THE FINAL REPORT OF THE SEASON.

STREAMFLOW FORECASTS ABOUT APRIL 1, 1978

BASIN, STREAM and/or FORECAST POINT	THIS YEAR FORECAST Thousand Acre Feet	THIS YEAR FORECAST Percent of Average	FORECAST PERIOD	PAST RECORD THOUSAND ACRE FEET Last Year	PAST RECORD THOUSAND ACRE FEET Average +
SALT RIVER DRAINAGE					
Salt near Roosevelt	275	193	Apr-May	55.1	142.6
Salt near Roosevelt	200	201	April	35.3	99.3
Tonto Creek near Roosevelt	25	298	Apr-May	4.26	8.4
Tonto Creek near Roosevelt	18	257	April	3.44	7.0
Verde River above Horseshoe	90	167	Apr-May	24.1	54.0
Verde River above Horseshoe	75	170	April	13.8	43.9
Total Salt River Project Streams	390	190	Apr-May	83.5	205.0
Total SRP Streams for April	293	195	April	52.5	150.2
GILA RIVER DRAINAGE					
Gila River at Calva	35	149	Apr-May	3.20	23.5
Gila River near Gila	32	150	Apr-May	10.8	20.0
Gila River near Solomon	68	153	Apr-May	9.8	44.3
Gila River nr. Solomon (April)	45	142	April	5.8	31.8
Gila River near Virden	36	158	Apr-May	8.1	22.8
Frisco River at Clifton	35	148	Apr-May	5.4	23.6
Frisco River at Glenwood	18	168	Apr-May	2.5	10.7
LITTLE COLORADO RIVER DRAINAGE					
Little Colo. River above Lyman Dam	8	103	Apr-June	.98	7.8
Greer 1/	6	105	Apr-June	2.2	5.7*
GRANITE CREEK DRAINAGE					
Granite Creek	2.0	---	Apr-May	---	---
Willow Creek	1.3	---	Apr-May	---	---
MIMBRES RIVER DRAINAGE					
Mimbres River near Mimbres	4	250	Apr-May	---	1.6
COLORADO RIVER DRAINAGE					
Virgin River nr. Littlefield	68	157	Apr-June	17.2	43.2
Colorado River -- Lake Powell Inflow (Issued by SCS, Utah)	9780	142	Apr-July	1,130	6,881.0
Lake Mary Inflow	2.5	166	Apr-May	---	1.5

1/ Includes Filler Ditch Diversion. + Based on 15-year period, 1958-72.
* Average is for less than 15 years.

+ 1958-1972 period.

1978

SPRING RUNOFF

Stream and Station	Measured 1/ Runoff Jan-March	Forecast Runoff April-May	Total-January thru May 1978	% of Average	Last Year
Salt River at Intake	644	275	919	284	95
Verde River above Horseshoe	828	90	918	481	72
Tonto Creek above Roosevelt	247	25	272	579	10
Gila River near Virden	102	36	138	179	21
Gila River near Solomon	234	68	302	192	33
Gila River near Calva	145	35	180	160	18
Frisco River at Clifton	84	35	119	153	15
Little Colorado (Jan-June)	3	8	11	100	2.4

1/ Provisional runoff provided by USGS and Salt River Project

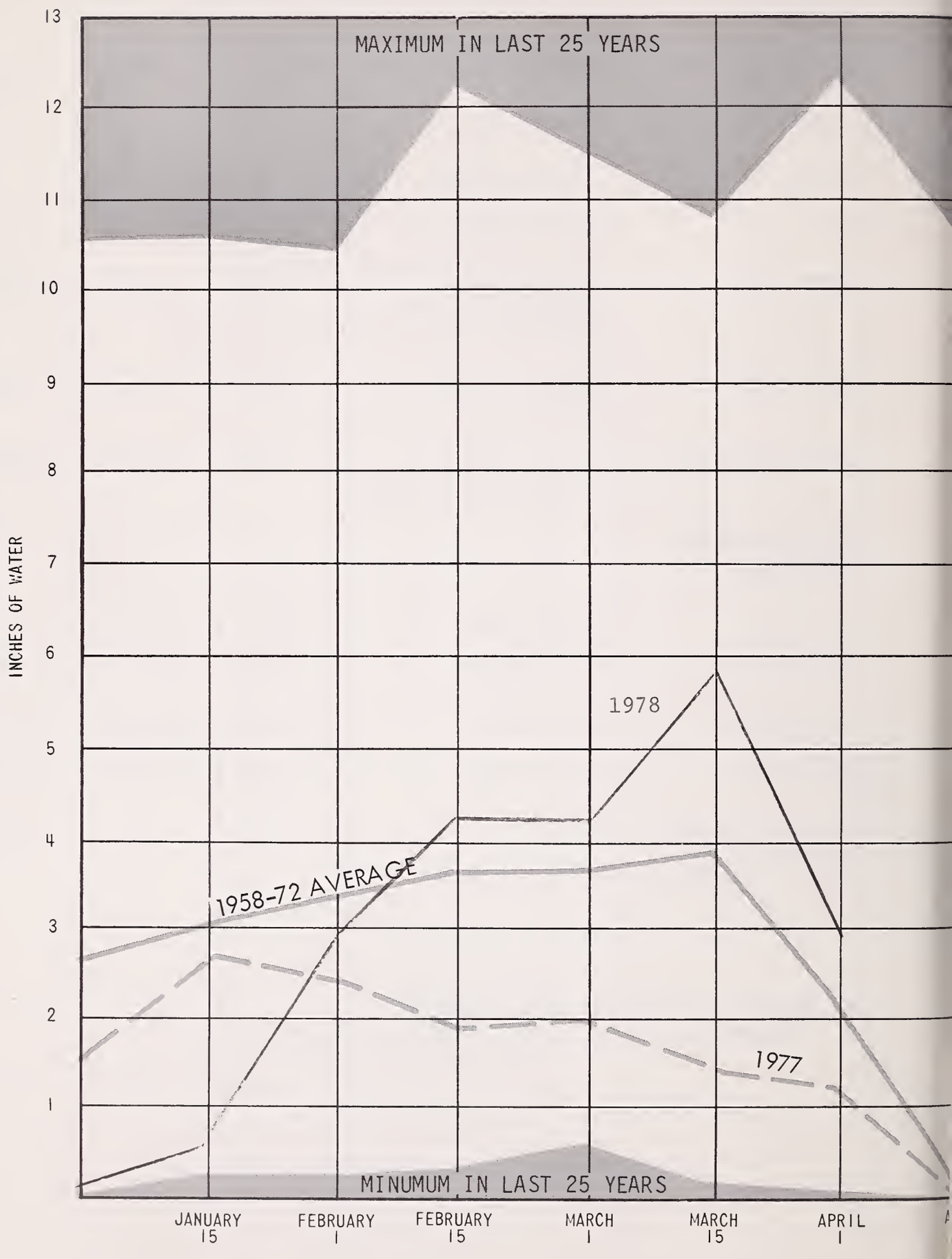
RESERVOIR STORAGE (Thousand Acre Feet) ABOUT APRIL 1, 1978

Basin or Stream	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average†
GILA RIVER DRAINAGE					
Agua Fria	Lake Pleasant	157.6	157.6	30.8	62.3
Granite	Watson Lake	4.7	4.7	2.38	3.5*
Granite	Willow Creek	6.1	6.1	1.07	3.0*
Gila	San Carlos	1,073	269.9	6.0	199.7
Salt (4)	Roosevelt, Apache, Canyon & Saguaro	1,755	1,612	934.2	1,145
Verde (2)	Bartlett and Horseshoe	317.7	314.9	9.4	158.2
Salt and Verde	6 Salt River Project Reservoirs	2,073	1926.9	943.6	1,303
COLORADO RIVER DRAINAGE					
Colorado	Lake Havasu	619.4	567.8	571.6	555.4
Colorado	Lake Mohave	1,810	1617.5	1,707	1,675
Colorado	Lake Mead	26,159	21,281	21,429	16,927
Colorado	Lake Powell	25,002	14,528	17,940	7,352*
Little Colorado	Lyman	30.6	8.6	15.60	15.0
Little Colorado	Show Low Lake	5.1	5.1	.80	2.4

† *Based on 15-year period, 1958-72*
* *Average is for less than 15 years of record*

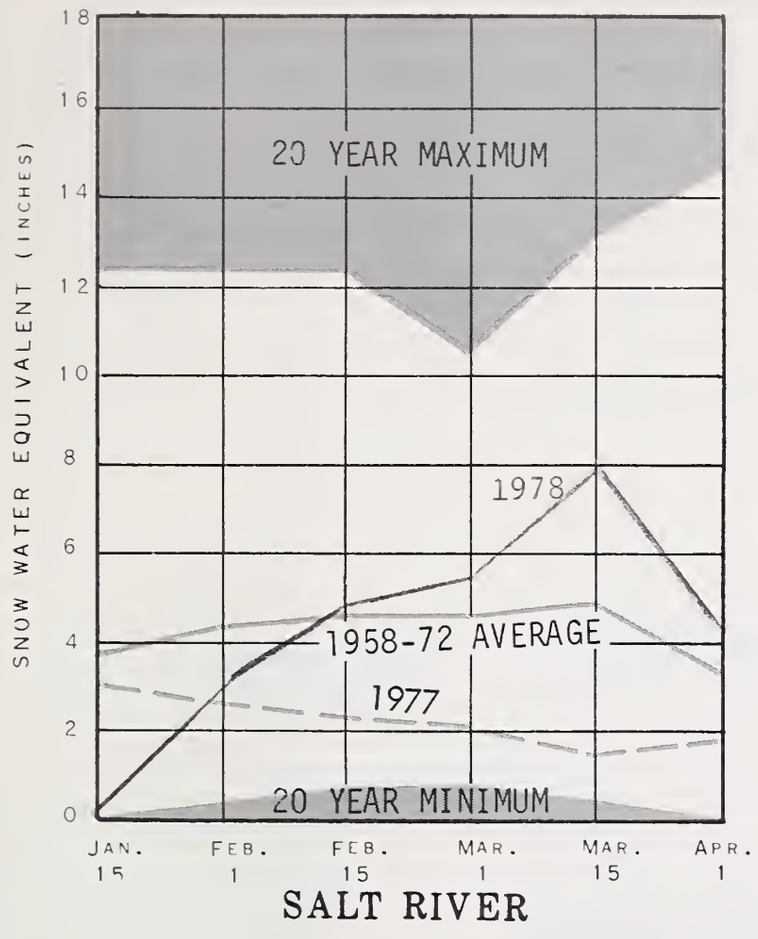
USDA-SCS-PORTLAND OREG 1969

AVERAGE SNOW COVER
ARIZONA
1978

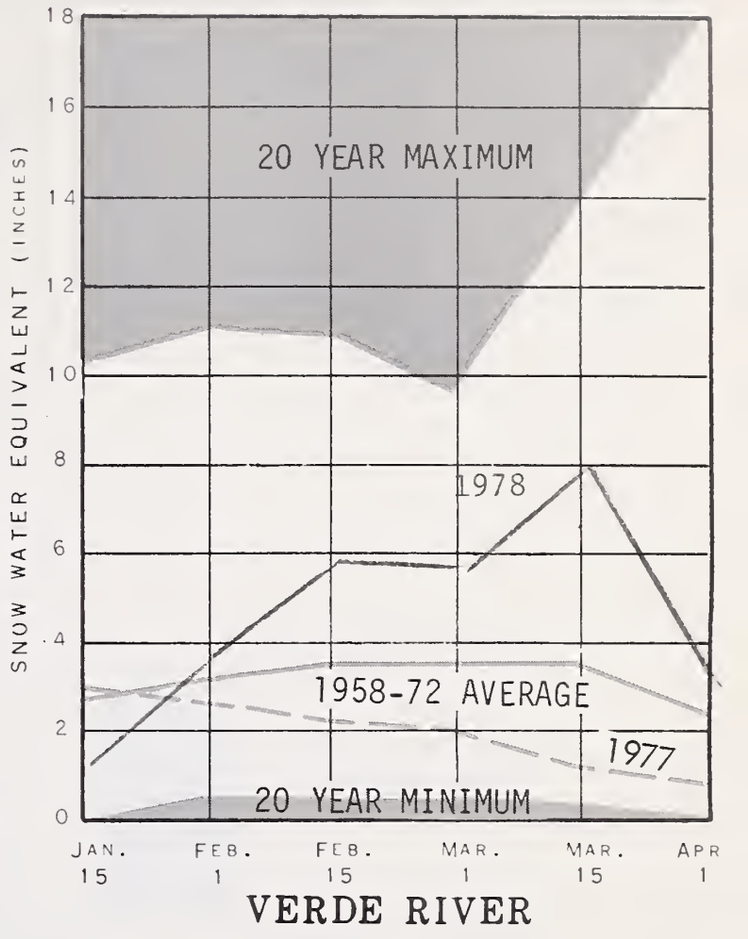


This graph represents the average snow water content on eleven selected snow courses on Arizona Sub-Watersheds.

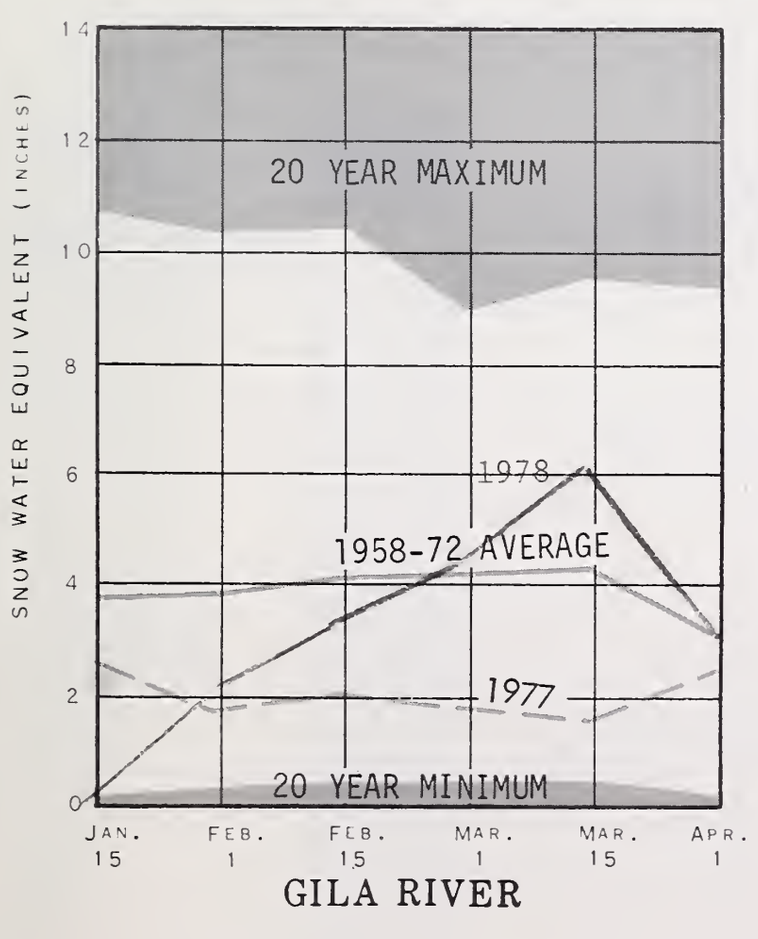
1978
WATERSHED SNOW COVER



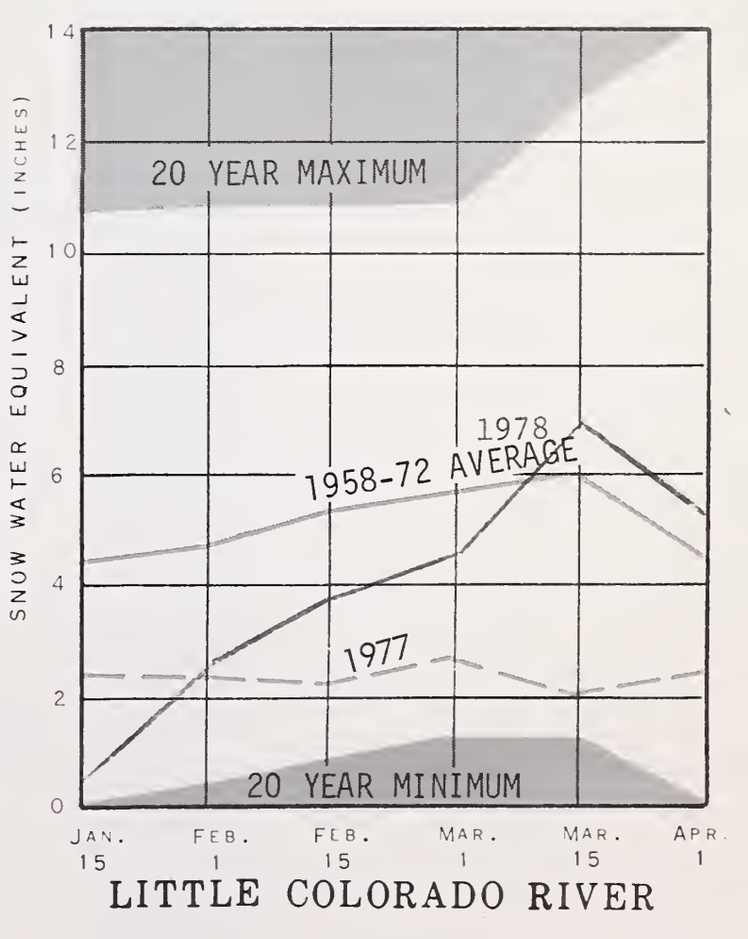
SALT RIVER



VERDE RIVER



GILA RIVER



LITTLE COLORADO RIVER

BASED ON SELECTED SNOW SURVEY COURSES

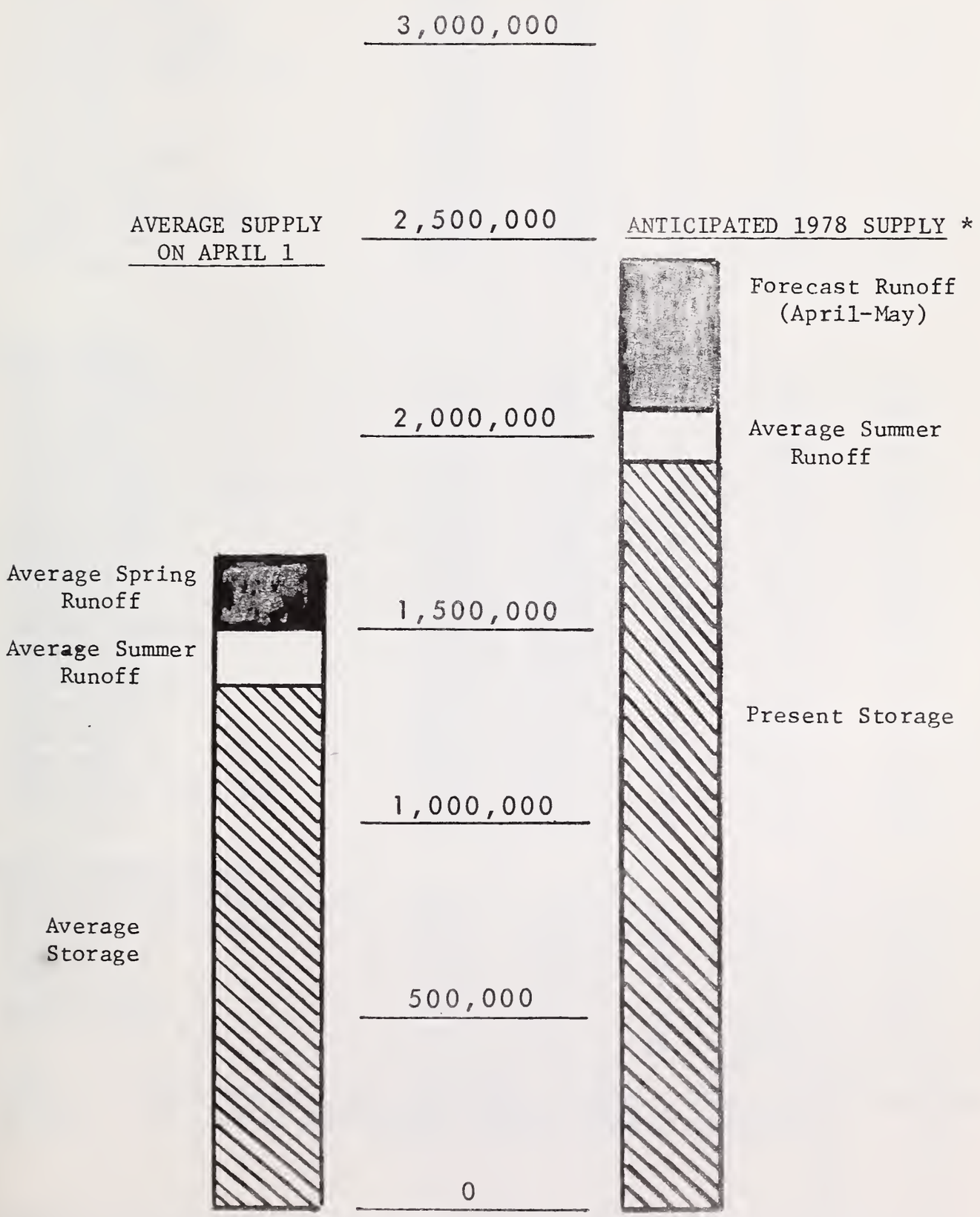
SUMMARY of SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS) ABOUT APRIL 1, 1978

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF:	
		Last Year	Average
Gila	10	140	116
Salt	10	253	126
Verde	10	430	132
Little Colorado	5	210	122

WATER SUPPLY INVENTORY
SALT RIVER VALLEY SYSTEM

IN ACRE-FEET

APRIL 1, 1978



* Based on Present Storage + Forecast Spring Runoff + Average Summer Runoff

SNOW ABOUT APRIL 1, 1978

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average †
GILA RIVER						
Bear Wallow	8100	3/31	1	0.5	0.8	2.9
Beaver Head	8000	3/31	0	0.0	1.7	1.7
Coronado Trail	8000	3/31	0	0.0	1.3	0.7
Emory Pass #1 *	7800	3/31	0	0.0	0.0	0.0**
Emory Pass #2 *	7800	3/31	0	0.0	0.6	0.0**
Frisco Divide	8000	3/31	0	0.0	1.2	0.6
Hannagan Meadows *	9090	4/4	23	9.7	3.8	8.0**
Hummingbird (A)	10550	3/31	45	16.7	9.5	15.1**
McKnight Cabin * (A)	9300	3/31	6	2.5	1.0	2.4**
Mogollon	7000	3/30	0	0.0	1.5	0.0
Nutrioso	8500	3/31	0	0.0	1.1	0.5
Redstone Trail	8600	3/30	18	7.9	6.1	7.0**
Rose Canyon	7300	3/31	0	0.0	0.0	0.5
Silver Creek Divide	9000	3/30	33	13.5	7.8	11.5**
State Line	8000	3/31	0	0.0	0.3	0.6
Whitewater (A)	10750	3/31	87	26.1	13.6	20.2**
VERDE RIVER						
Baker Butte	7300	3/31	7	3.0	0.2	3.6**
Baker Butte #2	7700	3/31	42	19.0	6.3	---
Camp Wood	5700	3/31	0	0.0	0.0	0.1
Chalender *	7100	3/31	0	0.0	0.0	1.0
Copper Basin Divide	6720	3/31	0	0.0	0.0	0.0**
Fort Valley	7350	3/28	0	0.0	0.0	1.1
Gaddes Canyon	7600	3/30	13	5.8	1.7	3.6
Happy Jack	7630	3/31	1	0.4	0.0	1.4
Iron Springs *	6200	3/31	0	0.0	0.0	0.1
Mingus Mountain	7100	3/30	0	0.0	0.0	0.1
Mormon Lake *	7350	3/31	T	0.1	1.0	1.7
Mormon Mountain	7500	3/31	7	3.1	0.5	3.0
Newman Park	6750	3/31	0	0.0	0.0	0.6**
Snow Bowl #1	10260	3/31	54	21.6	4.5	10.3**
Snow Bowl #2	11000	3/31	83	28.0	8.8	19.5**
White Horse Lake Jct.	7150	3/31	0	0.0	0.0	1.2**
White Spar	6000	3/31	0	0.0	0.0	0.0**
LOWER COLORADO RIVER						
Bill Williams Intermediate	8550	3/31	44	19.0	3.7	6.3**
Bill Williams Summit	8950	3/31	61	23.7	5.6	9.3**
Chalender *	7100	3/31	0	0.0	0.0	1.0
Fort Valley	7350	3/28	0	0.0	0.0	1.1
Grand Canyon	7500	3/31	0	0.0	0.0	0.6
Williams Ski Run	7720	3/31	36	14.8	4.5	5.8**

† *1958-72 15-year period.* (*) *Adjacent drainage.* (**) *1958-72 Adjusted Average.* (A) *Aerial observation: water content estimated.*

† 1958-1972 period.

SNOW ABOUT APRIL 1, 1978

DRAINAGE BASIN and/or SNOW COURSE NAME	Elevation	THIS YEAR: Date of Survey	THIS YEAR: Snow Depth (Inches)	THIS YEAR: Water Content (Inches)	PAST RECORD: Water Content (inches) Last Year	PAST RECORD: Water Content (inches) Average †
SALT RIVER						
Baldy *	9125	3/28	18	7.7	2.4	6.2
Beaver Head	8000	3/31	0	0.0	1.7	1.7
Canyon Creek	7500	3/30	5	2.4	1.0	1.3
Canyon Point	7600	3/30	9	3.7	1.5	1.2**
Coronado Trail	8000	3/31	0	0.0	1.3	0.7
Forest Dale	6430	3/31	0	0.0	0.0	0.0
Ft. Apache	9160	3/31	14	6.1	3.1	6.3
Hannagan Meadows	9090	4/4	23	9.7	3.8	8.0**
Hawley Lake	8300	3/31	20	9.3	2.0	3.6**
Heber	7600	3/30	8	4.1	1.1	1.5
Maverick Fork	9050	3/31	26	12.6	2.0	7.5
McNary	7200	3/31	0	0.0	1.0	0.4
Milk Ranch	7000	3/31	0	0.0	0.5	0.1
Mt. Ord (A)	11000	3/30	94	36.8	16.2	26.4**
Nutrioso *	8500	3/31	0	0.0	1.1	0.5
Promontory Butte	7930	3/30	51	24.7	6.8	---
Smith Cienega (A)	9850	4/3	62	26.0	---	19.8**
Sunrise Summit	10600	3/31	51	18.2	9.6	---
Wilson Lake	9000	3/29	31	13.5	5.4	9.0**
Workman Creek	6900	3/31	0	0.0	0.7	2.8
LITTLE COLORADO RIVER						
Baldy	9125	3/28	18	7.7	2.4	6.2
Canyon Creek	7500	3/30	5	2.4	1.0	1.3
Canyon Point	7600	3/30	9	3.7	1.5	1.2**
Cheese Springs	8600	3/31	3	0.9	2.2	7.4**
Forest Dale	6430	3/31	0	0.0	0.0	0.0
Ft. Apache	9160	3/31	14	6.1	3.1	6.3
Fort Valley	7350	3/28	0	0.0	0.0	1.1
Happy Jack *	7630	3/31	1	0.4	0.0	1.4
Heber	7600	3/30	8	4.1	1.1	1.5
Lake Mary	6970	3/31	0	0.0	0.0	---
McNary	7200	3/31	0	0.0	1.0	0.4
Mormon Lake	7350	3/31	T	0.1	1.0	1.7
Mormon Mountain	7500	3/31	7	3.1	0.5	3.0
Nutrioso *	8500	3/31	0	0.0	1.1	0.5
Promontory Butte	7930	3/30	51	24.7	6.8	---
Snow Bowl #1	10260	3/31	54	21.6	4.5	10.3**
Snow Bowl #2	11000	3/31	83	28.0	8.8	19.5**
Wilson Lake	9000	3/29	31	13.5	5.4	9.0**
Baldy #2	9750	3/29	57	24.8	9.4	16.9
Baldy #3	10950	3/29	83	34.7	18.7	25.3

† 1958-72 15-year period. (*) Adjacent drainage. (**) 1958-72 Adjusted Average. (A) Aerial observation: water content estimated.

† 1958-1972 period.

SNOW ABOUT MARCH 15, 1978

DRAINAGE BASIN and/or SNOW COURSE NAME	Elevation	THIS YEAR: Date of Survey	THIS YEAR: Snow Depth (Inches)	THIS YEAR: Water Content (inches)	PAST RECORD: Water Content (inches) Last Year	PAST RECORD: Water Content (inches) Average +
GILA RIVER						
Bear Wallow	8100	3/14	22	8.9	0.3	5.0
Beaver Head	8000	3/14	15	4.0	0.2	2.8
Coronado Trail	8000	3/14	21	7.7	0.0	2.2
Emory Pass #1 *	7800	3/14	0	0.0	0.0	0.3**
Emory Pass #2 *	7800	3/14	0	0.0	0.2	0.7**
Frisco Divide	8000	3/14	6	1.4	0.1	1.9
Hannagan Meadows *	9090	3/14	48	16.1	2.6	8.9**
Hummingbird (A)	10550	3/7	60	15.0	8.0	16.3**
McKnight Cabin * (A)	9300	3/13	28	9.5	3.1	2.5**
Mogollon	7000	3/14	0	0.0	0.0	1.2
Nutrioso	8500	3/14	8	2.4	0.0	1.4
Redstone Trail	8600	3/14	36	12.7	4.9	7.4**
Rose Canyon	7300	3/14	9	2.6	0.0	2.0
Silver Creek Divide	9000	3/14	49	16.0	6.6	12.2**
State Line	8000	3/14	13	4.0	0.0	1.8
Whitewater (A)	10750	3/7	96	21.1	10.6	20.3**
VERDE RIVER						
Baker Butte	7300	3/14	28	11.1	0.9	5.0**
Baker Butte #2	7700	3/14	58	22.2	6.5	---
Camp Wood	5700	3/14	0	0.0	0.0	0.4
Chalender *	7100	3/14	17	5.1	0.3	2.2
Copper Basin Divide	6720	3/14	7	1.9	0.0	1.2**
Fort Valley	7350	3/14	19	6.6	0.0	2.0
Gaddes Canyon	7600	3/14	29	10.0	2.0	5.3
Happy Jack	7630	3/14	28	9.2	0.4	2.6
Iron Springs *	6200	3/14	4	1.4	0.0	0.4
Mingus Mountain	7100	3/14	1	0.1	0.0	0.7
Mormon Lake *	7350	3/14	19	6.7	2.5	3.4
Mormon Mountain	7500	3/14	32	12.1	2.1	4.7
Newman Park	6750	3/14	3	1.0	0.0	1.5**
Snow Bowl #1	10260	3/13	70	20.8	4.1	9.9**
Snow Bowl #2	11000	3/13	97	27.2	5.4	18.0**
White Horse Lake Jct.	7150	3/14	23	7.6	0.0	3.2**
White Spar	6000	3/14	4	1.4	0.0	0.4**
Mormon Mt. Summit	8470	3/14	68	25.0	7.1	---
LOWER COLORADO RIVER						
Bill Williams Intermediate	8550	---	---	---	3.5	8.0**
Bill Williams Summit	8950	---	---	---	4.9	11.1**
Chalender *	7100	3/14	17	5.1	0.3	2.2
Fort Valley	7350	3/14	19	6.6	0.0	2.0
Grand Canyon	7500	3/14	20	6.1	0.0	1.2
Williams Ski Run	7720	3/14	55	17.8	4.5	7.0**

+ 1958-72 15-year period. (*) Adjacent drainage. (**) 1958-72 Adjusted Average. (A) Aerial observation: water content estimated.

SNOW ABOUT MARCH 15, 1978

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
					Water Content (inches)	
NAME	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (inches)	Last Year	Average †
SALT RIVER						
Baldy *	9125	3/15	29	9.8	2.9	7.5
Beaver Head	8000	3/14	15	4.0	0.2	2.8
Canyon Creek	7500	3/14	26	10.1	1.0	3.1
Canyon Point	7600	3/14	39	14.6	1.2	3.8**
Coronado Trail	8000	3/14	21	7.7	0.0	2.2
Forest Dale	6430	3/14	0	0.0	0.0	0.4
Ft. Apache	9160	3/15	28	8.7	3.1	8.0
Hannagan Meadows	9090	3/14	48	16.1	2.6	8.9**
Hawley Lake	8300	3/14	44	16.0	4.1	6.4**
Heber	7600	3/14	31	12.2E	1.2	3.3
Maverick Fork	9050	3/14	42	14.5	4.8	8.9
McNary	7200	3/14	7	1.6	0.1	2.0
Milk Ranch	7000	3/14	1	0.2	0.0	0.8
Mt. Ord (A)	11000	3/7	112	31.4	12.5	23.8**
Nutrioso *	8500	3/14	8	2.4	0.0	1.4
Promontory Butte	7930	3/14	75	28.3	7.2	---
Smith Cienega (A)	9850	3/7	72	21.6	8.1	17.7**
Sunrise Summit	10600	3/13	67	17.6	7.9	---
Wilson Lake	9000	3/13	50	14.5	4.6	11.4**
Workman Creek	6900	3/15	24	8.3	0.2	4.9
LITTLE COLORADO RIVER						
Baldy	9125	3/15	29	9.8	2.9	7.5
Canyon Creek	7500	3/14	26	10.1	1.0	3.1
Canyon Point	7600	3/14	39	14.6	1.2	3.8**
Cheese Springs	8600	3/13	24	6.9	4.0	8.7**
Forest Dale	6430	3/14	0	0.0	0.0	0.4
Ft. Apache	9160	3/15	28	8.7	3.1	8.0
Fort Valley	7350	3/14	19	6.6	0.0	2.0
Happy Jack *	7630	3/14	28	9.2	0.4	2.6
Heber	7600	3/14	31	12.2E	1.2	3.3
Lake Mary	6970	3/14	1	0.4	0.3	---
McNary	7200	3/14	7	1.6	0.1	2.0
Mormon Lake	7350	3/14	19	6.7	2.5	3.4
Mormon Mountain	7500	3/14	32	12.1	2.1	4.7
Nutrioso *	8500	3/14	8	2.4	0.0	1.4
Promontory Butte	7930	3/14	75	28.3	7.2	---
Snow Bowl #1	10260	3/13	70	20.8	4.1	9.9**
Snow Bowl #2	11000	3/13	97	27.2	5.4	18.0**
Wilson Lake	9000	3/13	50	14.5	4.6	11.4**
Inner Basin #1	10000	3/9	86	28.0	6.6	17.4
Inner Basin #2	9750	3/9	69	21.2	4.9	11.0

† *1958-72 15-year period.* (*) *Adjacent drainage.* (**) *1958-72 Adjusted Average.* (A) *Aerial observation: water content estimated.*

† 1958-1972 period

PRECIPITATION (Inches) ABOUT APRIL 1, 1978

DRAINAGE BASIN and PRECIPITATION GAGE LOCATION	ELEVATION	CURRENT INFORMATION			FROM APPROX. NOV. 1 TO DATE		
		Date of Reading	Month's Precipitation	Average †	This Year	Average †	Percent of Average
GILA RIVER							
Silver Creek Divide	9000	3/30	5.80	2.41*	18.88	14.23*	133
Hannagan Meadows **	9030	4/4	6.70	2.21	17.14	12.80	134
Frisco Divide **	8000	3/31	2.72	---	7.94	---	---
SALT RIVER							
Canyon Point	7600	3/30	12.31	3.67*	30.17	17.17*	176
Hannagan Meadows **	9030	4/4	6.70	2.21	17.14	12.80	134
Little Wildcat (Heber Snow Course)	7600	3/30	10.78	2.96	26.93	14.46	186
Maverick Fork	9050	3/31	4.65	2.24	15.85	12.26	129
Workman Creek **	6970	3/30	12.05	3.00	37.54	17.28	217
Wilson Lake	9100	3/29	6.16	2.50*	14.94	12.99*	115
VERDE RIVER							
Baker Butte	7300	3/31	11.65	3.37*	27.89	17.32*	161
Copper Basin Divide	6720	3/31	9.30	2.43*	22.25	11.52*	193
Fort Valley **	7350	3/31	5.66	2.06	15.22	9.08	168
Happy Jack **	7480	3/31	8.71	2.27	21.50	11.37	189
Mingus Mountain	7660	3/30	8.00	2.13	20.99	9.99	210
Mormon Mountain	7500	3/31	9.85	3.03*	27.40	16.17*	169
White Horse Lake Jct.**	7150	3/31	8.70	---	24.75	---	---
LITTLE COLORADO							
Inner Basin #1	9830	3/9	---	3.01	20.10	15.84	127
Inner Basin #2	10050	3/9	---	3.49*	28.15	18.16*	155
Greer Lakes	8500	3/31	1.35	1.15	6.22	6.46	96
Little Wildcat (Heber Snow Course)	7600	3/30	10.78	2.96	26.93	14.46	186
Sheep Crossing (Baldy Snow Course)	9125	3/31	3.70	2.23	12.48	11.90	105

† *1958-72 Average*
* *Adjusted Average*
** *Data Supplied by U.S. Forest Service*

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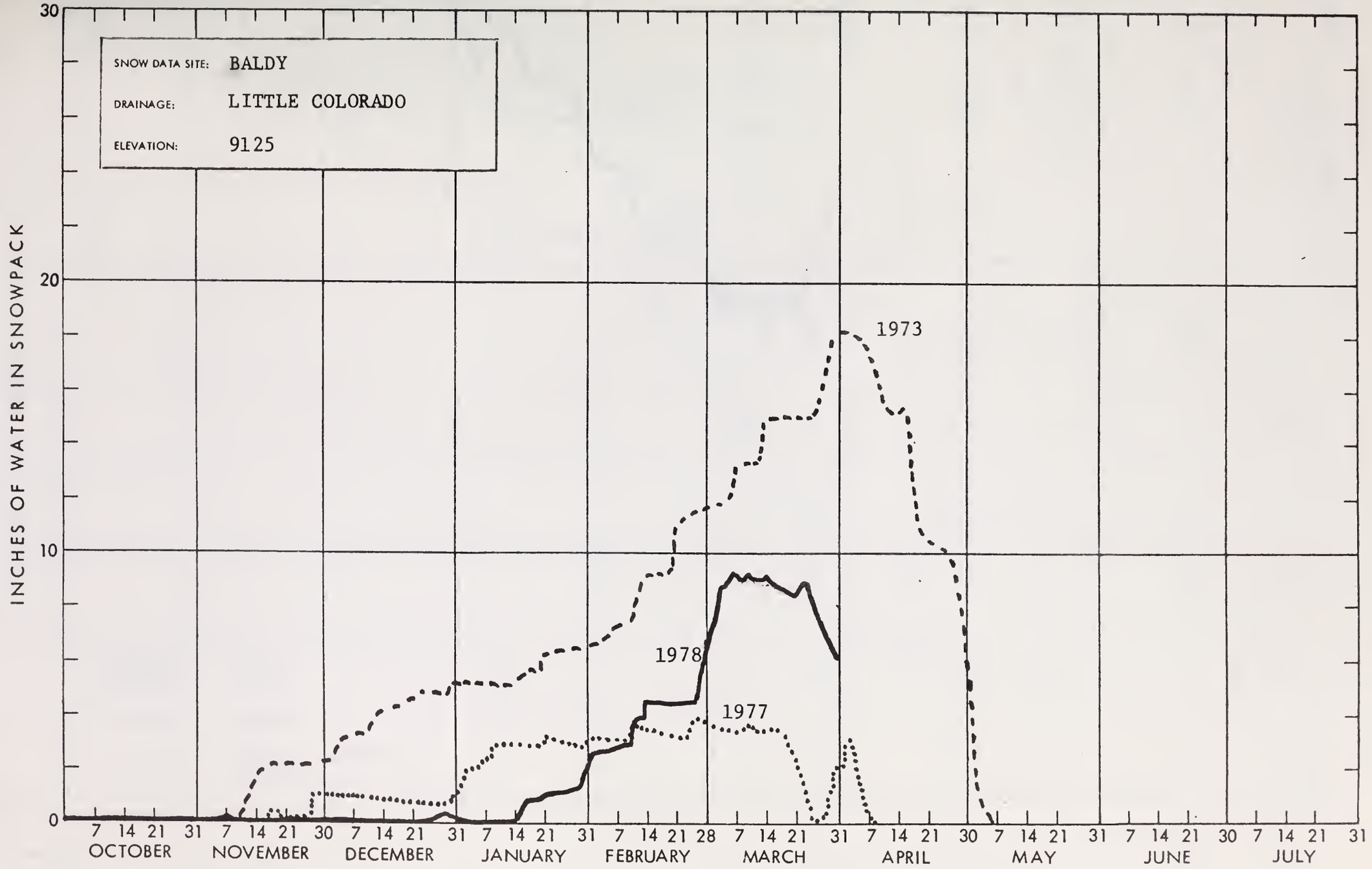
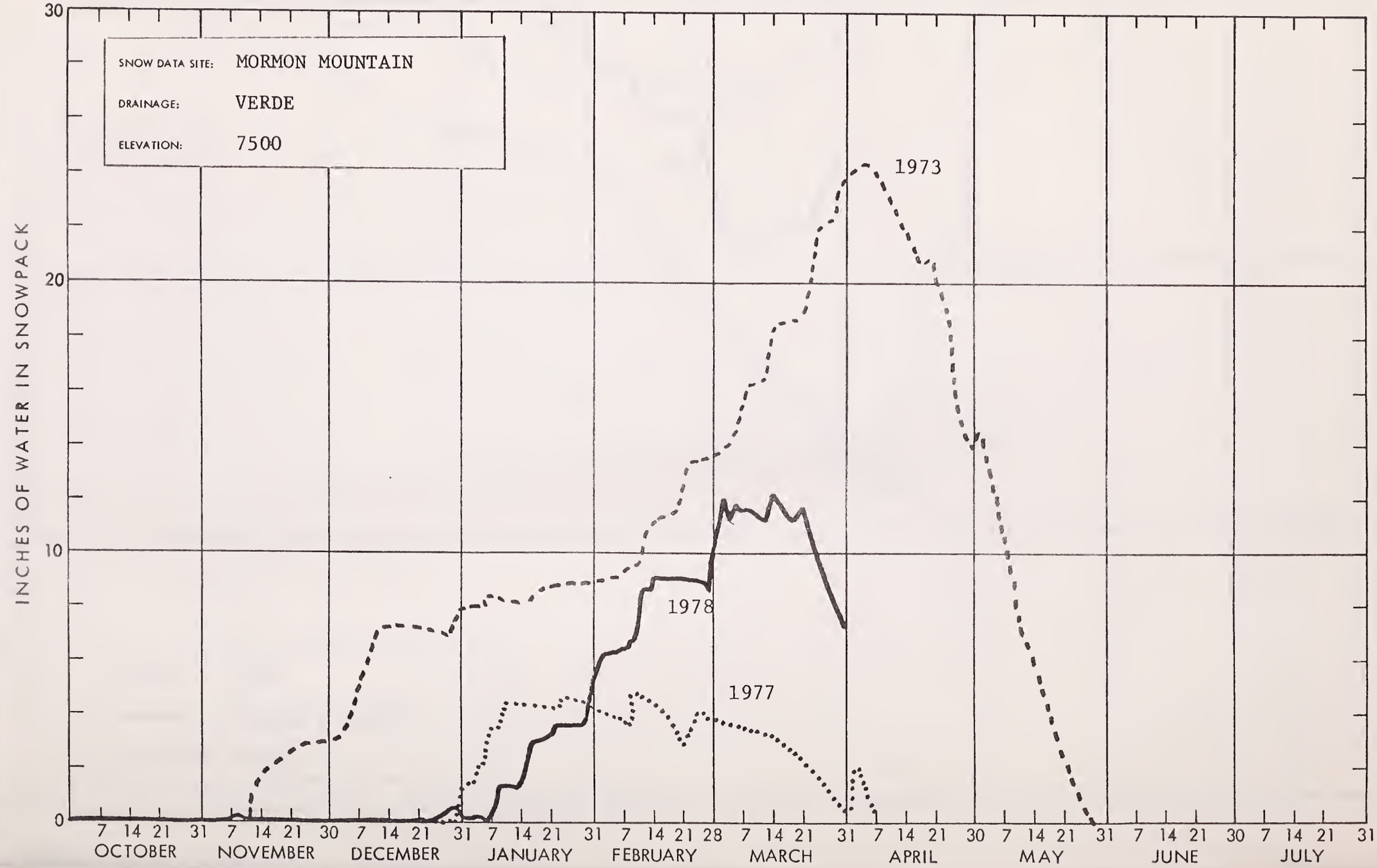

SNOW DATA SITE: BALDY
DRAINAGE: LITTLE COLORADO
ELEVATION: 9125
INCHES OF WATER IN SNOWPACK
30
20
10
0
1973
1978
1977
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY

WSFB-X138


SNOW DATA SITE: MORMON MOUNTAIN
DRAINAGE: VERDE
ELEVATION: 7500
INCHES OF WATER IN SNOWPACK
30
20
10
0
1973
1978
1977
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY

SOIL MOISTURE ABOUT APRIL 1, 1978

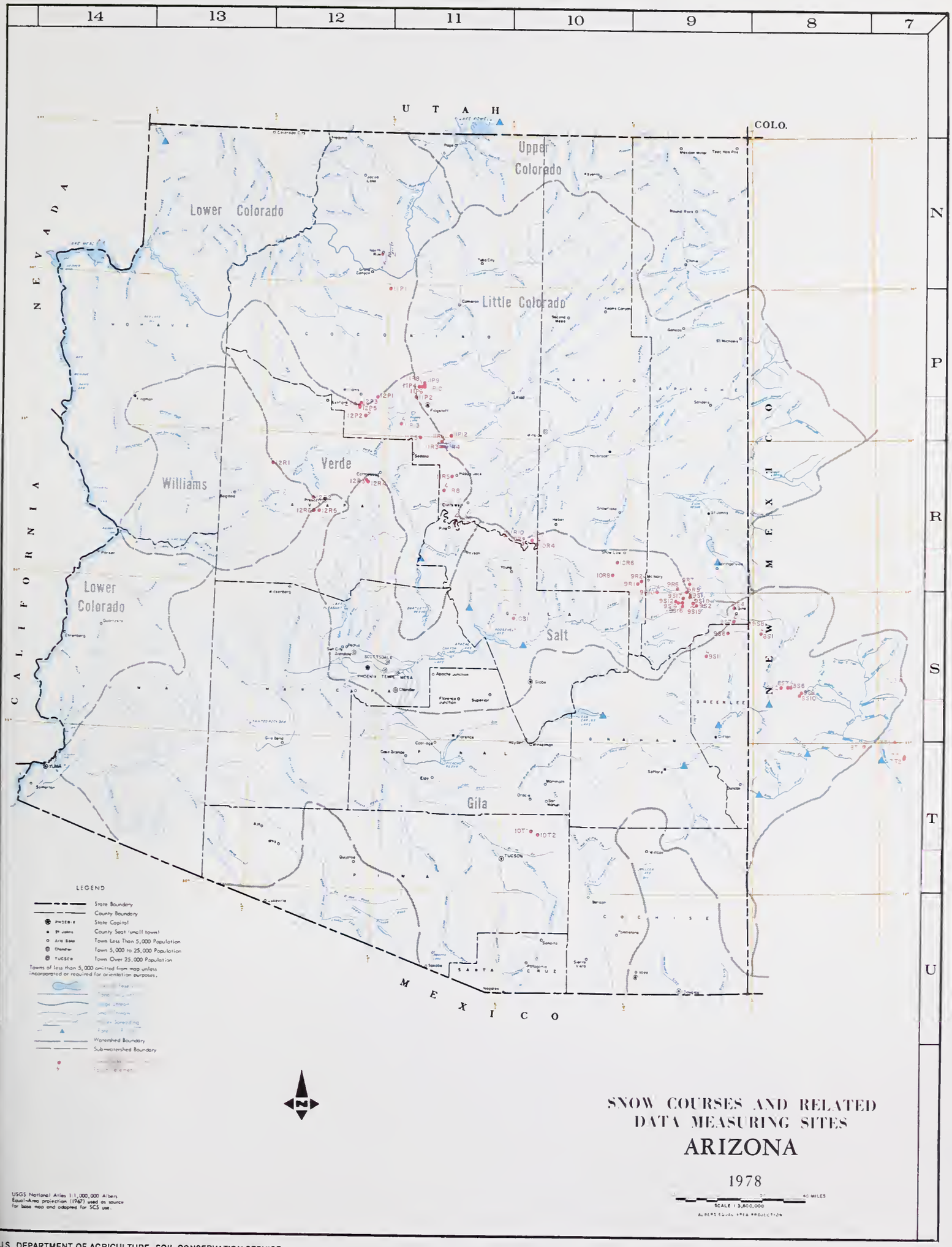
DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average †
GILA RIVER							
Frisco Divide	8000	48	13.3	3/31	12.1	6.4	11.6
SALT RIVER							
Black River Divide	9100	48	16.8	3/31	16.0	16.9	16.9
Canyon Creek	7500	48	18.3	3/30	19.5	16.6	16.1
Corduroy Creek	6000	36	13.5	3/31	13.5	9.5	10.4
McNary	7200	48	16.3	3/30	17.9	15.1	16.1
VERDE RIVER							
Mormon Mountain	7500	48	16.1	3/31	17.8	15.1	16.9
Newman Park	6750	48	17.7	3/31	19.5	15.3	19.4

† *1958-72 15-year average*

+ 1958-1972 period.

1978

SNOW COURSE	SNOW SURVEYOR
Agassiz	SCS (Jorgensen and Munda) and City of Flagstaff (Talbot)
Baker Butte #1 & #2	SCS (Enz)
Baldy	SCS (Kyle)
Bear Wallow	Coronado National Forest (Palmer and Martin)
Beaver Head	Apache-Sitgreaves National Forest (Bonomo & Woyewoozic)
Bill Williams Int.	Kaibab National Forest (Jones and Eddy)
Bill Wms. Summit	Kaibab National Forest (Jones and Eddy)
Bright Angel	National Park Service (Buono and Allison)
Camp Wood	Prescott National Forest (K. Metzger)
Canyon Creek	SCS (Enz)
Canyon Point	SCS (Enz)
Chalender	Kaibab National Forest (Evan Boshell)
Cheese Springs	SCS (Kyle and Stanton)
Copper Basin Divide	SCS (Jeoff Parker)
Coronado Trail	Apache-Sitgreaves National Forest (Bonomo & Woyewoozic)
Emory Pass #1 and #2	SCS (Bray and Garcia)
Forest Dale	Bureau of Indian Affairs (Grippen and Endfield)
Ft. Apache	SCS (Kyle)
Ft. Valley	Rocky Mountain Forest and Range Experimental Station
Frisco Divide	Gila National Forest (George Gibbons)
Gaddes Canyon	SCS (Earl Barto)
Grand Canyon	National Park Service (Swift and Ebersole)
Hannagan Meadows	Apache-Sitgreaves National Forest (Bonomo & Woyewoozic)
Happy Jack	Coconino National Forest (Allred and Poleyquira)
Hawley Lake	Bureau of Indian Affairs (Grippen and Endfield)
Heber	SCS (Enz)
Hummingbird	SCS (Ewan)
I. B. #1 (Bear Paw)	SCS (Jorgensen & Munda) and City of Flagstaff (Talbot)
I. B. #2 (Snowslide)	SCS (Jorgensen & Munda) and City of Flagstaff (Talbot)
Iron Springs	SCS (Jeoff Parker)
Lake Mary	SCS (Jorgensen and Munda)
Maverick Fork	SCS (Kyle)
McKnight Cabin	SCS (Ewan)
McNary	Bureau of Indian Affairs (Grippen and Endfield)
Milk Ranch	Bureau of Indian Affairs (Grippen and Endfield)
Mingus Mountain	SCS (Earl Barto)
Mogollon	SCS (James Lyon)
Mormon Lake	SCS (Jorgensen and Munda)
Mormon Mountain	SCS (Jorgensen and Munda)
Mt. Ord	Salt River Project (Warskow)
Newman Park	SCS (Jorgensen and Munda)
Nutrioso	Apache-Sitgreaves National Forest (Bonomo & Woyewoozic)
Promontory Butte	SCS (Enz and Winslow)
Redstone Trail	SCS (James Lyon)
Rose Canyon	Coronado National Forest (Palmer and Martin)
Silver Creek Divide	SCS (James Lyon)
Smith Cienega	Salt River Project (Warskow)
Snow Bowl #1 & #2	Coconino National Forest (R. Hughes)
State Line	Gila National Forest (George Gibbons)
Sunrise Summit	SCS (Stanton & Kyle)
White Horse Lake Jct.	Kaibab National Forest (Jones and Eddy)
White Spar	SCS (Jeoff Parker)
Whitewater	SCS (Ewan)
Williams Ski Run	Kaibab National Forest (Jones & Eddy)
Wilson Lake	SCS (Stanton and Kyle)
Workman Creek	Rocky Mountain Forest and Range Experimental Station



SNOW COURSES AND RELATED DATA MEASURING SITES

ARIZONA

1978

USGS National Atlas 1:1,000,000 Albers Equal-Area projection (1967) used as source for base map and adapted for SCS use.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

INDEX to SNOW COURSES and SOIL MOISTURE STATIONS

NUMBER	NAME	SEC.	TWP.	RGE.	ELEV.	DRAINAGE	OBSERVER	RECORD BEGAN
11P10A	Agassiz	32	23N	7E	11200	Little Colorado	SCS-CF*	1968
11R7	Baker Butte #2	9	12N	9E	7700	Verde	SCS	1971
11R6PSPRT	Baker Butte	4	12N	9E	7300	Verde	SCS	1966
9S1APSPRT	Baldy	28	7N	27E	9125	Little Colorado	SCS	1950
9S15	Baldy #2	12	6N	26E	9750	Little Colorado	SCS	1963
9S16	Baldy #3	13	6N	26E	10950	Little Colorado	SCS	1963
10T1	Bear Wallow	6	12S	16E	8100	Gila	FS	1948
9S6	Beaver Head	13	4N	30E	8000	San Francisco	FS	1938
12P5	Bill William Intermediate	17	21N	2E	8550	Cataract	FS	1967
12P4	Bill Williams Summit	17	21N	2E	8950	Verde	FS	1967
9S10m	Black River Divide	10	6N	27E	9400	Salt	SCS	1954
12N1	Bright Angel	34	33N	3E	8400	Bright Angel Creek	NPS	1947
12R1	Camp Wood	3	16N	6W	5700	Verde	FS	1946
10R7M	Canyon Creek #2	18	11N	15E	7500	Little Colorado	SCS	1958
10R9P	Canyon Point	28	11N	14E	7600	Salt	SCS	1967
12P1M	Chalender	27	22N	3E	7100	Verde	FS	1947
9R7	Cheese Springs	28	8N	27E	8600	Little Colorado	SCS	1969
12R6P	Copper Basin Divide	23	13N	3W	6720	Verde	SCS	1963
10R8m	Corduroy Creek	4	8N	21E	6000	Salt	SCS	1954
9S7PSPRT	Coronado Trail	26	5N	30E	8000	San Francisco	FS	1938
7T1	Emory Pass #1	16	16S	9W**	7800	Mimbres	SCS	1967
7T2	Emory Pass #2	16	16S	9W**	7800	Mimbres	SCS	1967
11P13PSPRT	Fry	35	20N	5E	7220	Verde	SCS	1978
10R6	Forest Dale	2	9N	21E	6430	Salt	BIA	1939
9R5	Ft. Apache	18	7N	27E	9160	Little Colorado	SCS	1951
11P2P	Ft. Valley	22	22N	6E	7350	Little Colorado	FS	1947
8S1MPSPRT	Frisco Divide	31	6S	20W**	8000	San Francisco	FS	1938
12R4	Gaddes Canyon	11	15N	2E	7600	Verde	SCS	1954
11P1	Grand Canyon	21	30N	4E	7500	Hance Creek	NPS	1947
9S11PSPRT	Hannagan Meadows	19	3N	29E	9090	San Francisco	FS	1964
11R5P	Happy Jack	30	16N	9E	7630	Verde	FS	1951
9R10PSPRT	Hawley Lake	13	7N	24E	8300	Salt	BIA	1966
10R4PSPRT	Heber	28	11N	15E	7600	Little Colorado	SCS	1950
8S9A	Hummingbird	19	11S	17W**	10550	Gila	SCS	1964
11P9P	Inner Basin #1	28	23N	7E	10000	Little Colorado	SCS	1967
11P8P	Inner Basin #2	28	23N	7E	9750	Little Colorado	SCS	1967
12R2	Iron Springs	22	14N	3W	6200	Little Colorado	SCS	1946
11P12	Lake Mary	21	19N	9E	6930	Little Colorado	SCS	1975
7S3PSPRT	Lookout Mountain	1	10S	10W	8500	Gila	SCS	1978
9S2APSPRT	Maverick Fork	13	6N	27E	9150	Salt	SCS	1950
7S3A	McKnight Cabin	10	15S	10W**	9300	Mimbres	SCS	1967
9R2MPSPRT	McNary	23	8N	23E	7200	Salt	BIA	1939
9R1	Milk Ranch	33	8N	23E	7000	Salt	BIA	1941
12R3	Mingus Mountain	3	15N	2E	7100	Verde	SCS	1947
8S2	Mogollon	2	11S	19W**	7000	San Francisco	SCS	1953
11R4	Mormon Lake	13	18N	8E	7350	Little Colorado	SCS	1947
11R3MAPSPRT	Mormon Mountain	14	18N	8E	7500	Verde	SCS	1950
11R11	Mormon Mountain Summit	2	18N	8E	8470	Little Colorado	SCS	1975
9S12A	Mt. Ord	4	6N	26E	11200	Salt	SRP-SCS	1966
11P5M	Newman Park	25	19N	6E	6750	Verde	SCS	1963
9S4	Nutrioso	23	6N	30E	8500	San Francisco	FS	1938
11R10PSPRT	Promontory Butte	5	11N	13E	7930	Little Colorado	SCS	1973
8S7	Redstone Trail	5	11S	18W**	8600	San Francisco	SCS	1961
10T2	Rose Canyon	15	12S	16E	7300	Gila	FS	1948
8T1PSPRT	Signal Peak	13	16S	13W	8360	Gila	SCS	1977
8S8PSPRT	Silver Creek Divide	4	11S	18W**	9000	San Francisco	SCS	1964
9S14A	Smith Cienega	10	6N	26E	10050	Salt	SRP-SCS	1966
11P4	Snow Bowl #1	36	23N	6E	10260	Verde	FS	1961
11P6	Snow Bowl #2	31	23N	7E	11000	Verde	FS	1965
9S8	State Line	6	6S	21W**	8000	San Francisco	FS	1938
9S17	Sunrise Summit	36	7N	26E	10600	Salt	SCS	1972
11R8PSPRT	Sugarloaf	8	8E	14N	6120	Verde	SCS	1978
12P2P	White Horse Lake Jct.	2	20N	2E	7180	Verde	FS	1967
12R5	White Spar	19	13N	2W	6000	Verde	SCS	1963
8S10A	Whitewater	19	11S	17W**	10750	Gila	SCS	1964
12P3	Williams Ski Run	9	21N	2E	7720	Cataract	FS	1967
9R6P	Wilson Lake	4	7N	26E	9000	Salt	SCS	1966
10S1PSPRT	Workman Creek	33	6N	14E	6900	Salt	FS	1952

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R Radio Telemetry
SP Snow Pressure Pillow
T Temperature
** NM Principal Meridian
* City of Flagstaff

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